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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,011	08/15/2006	Niculo Steinrisser	P30190	9108
7055 7590 11/05/2007 GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			EXAMINER AMIRI, NAHID	
			ART UNIT 3679	PAPER NUMBER
			NOTIFICATION DATE 11/05/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

gbpatent@gbpatent.com  
pto@gbpatent.com

<b>Office Action Summary</b>	<b>Application No.</b> 10/598,011	<b>Applicant(s)</b> STEINRISSER, NICULO	
	<b>Examiner</b> Nahid Amiri	<b>Art. Unit</b> 3679	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 05 March 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 11-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 11-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 March 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)  | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/5/2007</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

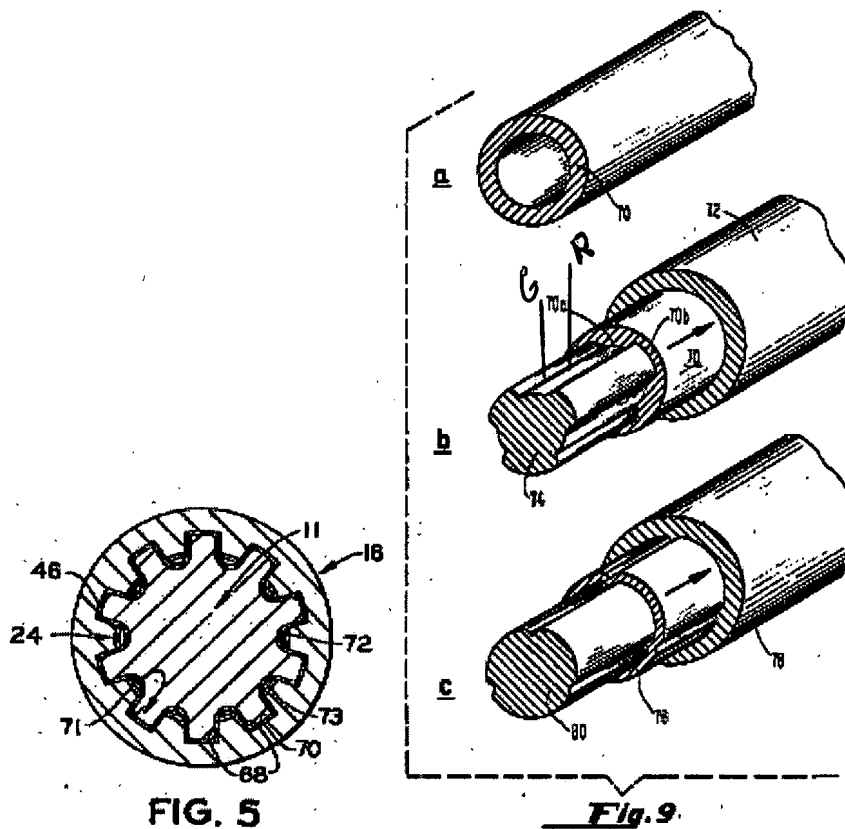
### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 11-17, 20-22, 24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Groves et al. in view of US Patent No. 4,622,022 Diffenderfer et al.**

With respect to claim 11, Groves et al. disclose a groove profile (Fig. 5) for a positive hub- shaft connection comprising a hub (16) having a plurality of grooves with an essentially quadrilateral groove cross section; a shaft (11) having a plurality of grooves with an essentially quadrilateral groove cross section. Groves et al. do not disclose that the groove profile having at least one rib radially projecting from one of the grooves of the hub or shaft towards one of the grooves of the other of the hub or shaft. Diffenderfer et al. teach (Fig. 9) that the shaft (74) having at least one rib (R) radially projecting from one of the groove (G) of the shaft (74) towards one of the grooves of the hub (70). It would have been obvious to one of ordinary skill in the art at the time of invention was made to provide the profile groove of Groves et al. with a rib projecting from the shaft as taught by Diffenderfer et al. in order for the torque transmit from the shaft to the hub.



With respect to claims 14 and 15, Groves et al. disclose (Fig. 5) that the at least one rib runs parallel to a flank of the groove from which the rib projects; wherein the at least one rib runs along an entire length of the groove from which the rib projects.

With respect to claim 20, Groves et al. disclose (Fig. 5) that the essentially quadrilateral groove cross section is an essentially rectangular groove cross section.

With respect to claim 22, Groves et al. disclose telescopic tube for drive shafts (16, Fig. 5) comprising an outer tube (16) having a plurality of grooves with an essentially quadrilateral groove cross section; an inner tube (11) having a plurality of grooves with an essentially quadrilateral groove cross section. Groove et al. do not disclose that the groove profile having at least one rib radially projecting from one of the grooves of the inner tube towards one of the groove of the outer tube. Diffenderfer et al. teach (Fig. 9) that the shaft (74) having at least one rib (R) radially projecting from one of the groove (G) of the shaft (74) towards one of the

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grooves of the outer tube (70). It would have been obvious to one of ordinary skill in the art at the time of invention was made to provide the profile groove of Groves et al. with a rib projecting from the inner tube as taught by Diffenderfer et al. in order for the torque transmit from the shaft to the hub.

With respect to claim 24, Groves et al. disclose (Fig. 5) that the inner tube and the outer tube (11, 16) are hollow bodies each with an approximately uniform profile thickness; and wherein the essentially quadrilateral groove cross section is an essentially rectangular groove cross section.

With respect to claims 16, 17, 21, and 26, Groves et al. disclose the claimed invention except that the at least one rib has a trapezoidal cross section tapering outwards and has a maximum width of 50% or 25% of a width of a corresponding groove from which the rib projects; and wherein the essentially quadrilateral groove cross section is an essentially trapezoidal groove cross section. Applicants admit in specification, paragraph 009, line 2, that the groove is rectangular or trapezoidal. Therefore, there is no criticality with respect to a specific shape of rib and groove being claimed. Also, it is conventional design practice to routinely experiment to arrive at desired values for a particular intended use. It would have been an obvious matter of design choice as determined through routine experimentation and optimization to provide the trapezoidal cross section of Groves et al. with a width of 50% or 25% of a width of a corresponding groove in order to provide the groove profile with a specific desirable dimensions and strength.

**Claims 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Groves et al. and Diffenderfer et al. as applied to claims 11, 14, 15, 20, 22, and 24 above, and further in view of Pub. No. US 2002/0040835 A1 Fukukawa et al.**

With respect to claims 27 and 28, Groves et al. disclose the claimed invention except for a method of producing a groove profile comprising conforming surface of one of the hub and the shaft with a profile mandrel through engagement with one or more profile rollers; and profiling the surface of one of the hub and the shaft to form the at least one rib. Fukukawa et al. (Fig. 6) teach a method of producing a groove profile by conforming surface of one of the hub (23) and

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the shaft (22) with a profile mandrel (3) through engagement with one or more profile rollers (5); and profiling the surface of one of the hub (23) and the shaft (22) to form the at least one rib (3d); and wherein periodic impacting engaging of the one or more profile rollers (3) with a surface of one of the hub (23) and the shaft (22). It would have been obvious to one of ordinary skill in the art at the time of invention was made to provide the profile groove of Groves et al. with the step method of Fukukawa et al. in order to produce a groove profile.

### ***Allowable Subject Matter***

Claims 12, 13, and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter:

As to claims 12 and 23, lines 2-7, the closest prior art Groves et al. (US 3,367,142) discloses the claimed system with the exception of "a radially inward surface of the groove of the hub forms a hub groove head and a radially outward surface of the groove of the hub forms a hub groove root, and wherein a radially inward surface of the groove of the shaft forms a shaft groove root and a radially outward surface of the groove of the shaft forms a shaft groove head, the at least one rib projects radially from one of the hub groove head, the hub groove root, the shaft groove head, and the shaft groove root".

There is no teaching or suggestion, absent the applicants' own disclosure, for one having ordinary skill in the art at the time the invention was made to modify the connector device as disclosed by Groves et al. (US 3,367,142) to have the above mentioned elemental features.

### ***Conclusion***


The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The prior cited references US Patent No. 5,647,683 Easley; US Patent No. 7,048,972 B2 Kitahata et al.; US Patent No. 6,997,076 B2 Menjak; US Patent No. 5,645,366 Ishibashi et al.; US Patent No. 6,705,949 Glowacki; US Patent No. 3,813,899 Abrahamer; US Patent No. 6,193,612 B1 Craig; US Patent No. 3,242,695 Ross, Jr.; and US Patent No. 6,726,228; are cited to show a groove profile.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nahid Amiri whose telephone number is (571) 272-8113. The examiner can normally be reached on 8:30-5:30. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571) 272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nahid Amiri  
Examiner  
Art Unit 3679  
October 23, 2006

  
**ROBERT J. SANDY**  
**PRIMARY EXAMINER**